

## Claims

1. Ignition coil for ignition systems, in particular a rod ignition coil for  
5 internal-combustion engines, comprising at least one primary winding (4) and at least one  
secondary winding (5), a high voltage being induced in secondary winding (5) when  
current flows in the primary winding (4), and comprising a ferromagnetic core (2) which  
is surrounded at least in part by the primary winding (4) and the secondary winding (5),  
one of the windings (4, 5) additionally being surrounded at least in part by the other,  
10 characterised in that at least one of the windings (4, 5) comprises at least one portion (6)  
having a winding density that is elevated relative to the remaining winding density, the  
diameter of the innermost turns being smaller in the at least one portion than the diameter  
of the innermost turns in the remaining winding portions (9).
- 15 2. Ignition coil according to claim 1, characterised in that the secondary  
winding (5) is so arranged relative to the primary winding (4) that each portion having  
elevated winding density on one winding corresponds to a portion with the remaining  
winding density on the other winding in the axial direction.
- 20 3. Ignition coil according to either claim 1 or claim 2, characterised in that  
the primary winding (4) surrounds the secondary winding (5) and the at least one portion  
having elevated winding density is an initial and/or final portion (6a, 6b) of the primary  
winding (4) and the secondary winding (5) is arranged in the remaining winding portion  
(9) of the primary winding (4).
- 25 4. Ignition coil according to claim 3, characterised in that the secondary  
winding (4) further comprises a pre-winding (5a) and/or final winding (5b) having  
reduced winding density, which is surrounded by the initial and/or final portion (6a, 6b)  
of the primary winding (4).
- 30 5. Ignition coil according to any one of claims 1 to 4, characterised in that at  
least one of the windings (4, 5) is a flat wire winding.

6. Ignition coil according to any one of claims 1 to 5, characterised in that a soft-magnetic sleeve (3) surrounds the windings (4, 5) and the core (2).

7. Ignition coil according to any one of claims 3 to 6, characterised in that the secondary winding (5) is divided into a plurality of individual segments.

8. Ignition coil according to claim 7, characterised in that the coil heights of the individual segments are configured to decrease in the manner of a cascade.

9. Ignition coil according to any one of claims 3 to 8, characterised in that the at least one portion having elevated winding density is arranged eccentrically with respect to the center line of the ignition coil (10).

10. Ignition coil according to claim 9, characterised in that the initial portion (6a) and the final portion (6b) of the primary coil (4) are arranged offset eccentrically substantially by 180° with respect to the center line of the ignition coil (10).